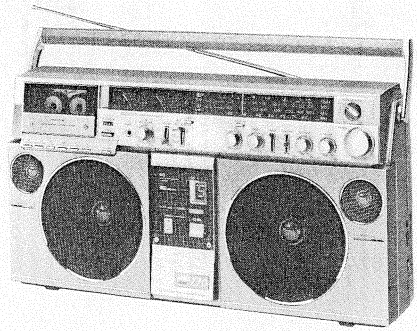
4-BAND STEREO RADIO CASSETTE RECORDER

MODEL NO. CS-770E,K

AIWA®

[SERVICE MANUAL]

Code No. 29-770-000-18



DATE OF ISSUE 7/1981

SPECIFICATIONS

GENERAL

Semiconductors:	11 ICs, 66 transistors, 32 diodes, 6 LED's
Power source:	E model Batteries DC 13.5V (UM-1 x 9) AC 110 ~ 120V/220 ~ 240V switchable 50/60 Hz Car battery (thru car adaptor) K model Batteries DC 13.5V (UM-1 x 9 or HP-2) AC 120V switchable 50/60 Hz Car battery (thru car adaptor)
Power consumption:	20W
Speakers:	160mmϕ x 2 (Woofer) 50mmϕ x 2 (Tweeter)
Dimension:	586(W) x 310(H) x 212(D) mm
Weight:	6.6 kg

RADIO SECTION

Circuit:	Superheterodyne	
Frequency range:	FM	87.4 ~ 108.3 MHz
	SW	5.8 ~ 18.5 MHz
	MW	515 ~ 1,650 kHz
	LW	145 ~ 320 kHz
Intermediate frequency:	FM	10.7 MHz
	SW, MW, LW	468 kHz
Sensitivity:		
(IHF, THD 3%)	FM	15 ± 4 dB (at 88 MHz) 17 ± 4 dB (at 100 MHz) 13 ± 4 dB (at 108 MHz)
(S/N 10 dB)	SW	38 ± 5 dB (at 5.9 MHz) 27 ± 5 dB (at 12.0 MHz) 17 ± 5 dB (at 18.0 MHz)
(S/N 10 dB)	MW	42 ± 4 dB (at 600 kHz) 42 ± 4 dB (at 1,000 kHz) 42 ± 4 dB (at 1,400 kHz)
(S/N 10 dB)	LW	52 ± 5 dB (at 150 kHz) 50 ± 5 dB (at 200, 300 kHz)
Image rejection:	FM	39 ± 5 dB (at 108.0 MHz)
	SW	6 ± 3 dB (at 18.0 MHz)
	MW	41 ± 5 dB (at 1,400 kHz)
	LW	46 ± 4 dB (at 300 kHz)
IF rejection:	FM	73 ± 6 dB (at 88 MHz)
	MW	30 ± 5 dB (at 600 kHz)
FM stereo separation:	19 ± 3 dB (at 1 kHz)	

TAPE RECORDER SECTION

Tape speed:	4.8 cm/s. ± 3%	
Recording system:	AC bias	
Erasing system:	AC erase	
Record bias frequency:	61 ± 0.5 kHz	
Distortion:	Less than 1.5% (PB) Less than 1.5% (REC/PB)	
Frequency response:	METAL tape:	35 ~ 16,000 Hz
	CrO_2 tape	35 ~ 13,000 Hz
	LH tape	35 ~ 12,500 Hz
Signal to noise ratio: (Un-weighted)	More than 49/47 dB [DC/AC] (PB) More than 43/42 dB [DC/AC] (REC/PB)	
Erasing ratio:	More than 60 dB	
Separation:	More than 38 dB (REC/PB)	
Output power:	More than 14W (7W + 7W)	
FF & rewind time:	90 ± 5 s. (at C-60)	
Automatic stop system:	Mechanical auto stop	
Pinch roller pressure:	125 ± 15 g (1.23 ± 0.15N)	
Wow and flutter:	Less than 0.038% (WRMS)	
Tale-up torque:	$35\ ^{+15}_{-5}$ g-cm ($343\ ^{+147}_{-49}$ mN·m)	
FF & rewind torque:	110 ± 20 g (1078 ± 196 mN·m)	
Input terminal:	MIC 3.5ϕ jack x 2 PHONO pin jack x 2 DIN 5P	
Input senstivity/impedance:		
	MIC	0.3 mV/3 kΩ
	DIN	0.5 V/470 kΩ
	PHONO	4 mV/47 kΩ
Output terminal:	DIN	5P
	EXT. SP	3.5ϕ jack x 2
	PHONES	6.3ϕ jack

- Noise reduction system manufactured under license from Dolby Laboratories Licensing Corporation.
- Dolby and the DD symbol are trademarks of Dolby Laboratories Licensing Corporation.
- Specifications and external appearance are subject to change without notice due to product improvement.

PRECAUTIONS

Pay special attention to the following during work.

1. Remove 8 screws on the rear cabinet marked by arrows when removing the main cabinet. Be careful not to remove the cassette lid at this time.
(See figure 1)

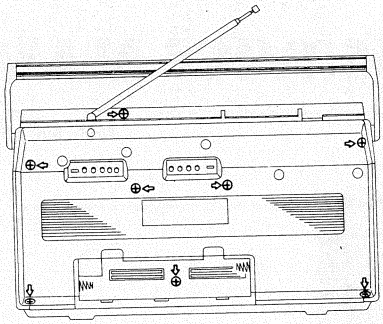


Fig. 1

2. Be sure to repair the PC Board after removing the level meter because the pointer of the level meter may be damaged during the repair work.
The level meter can be removed by pressing it by finger from the back.
(See figure 2)

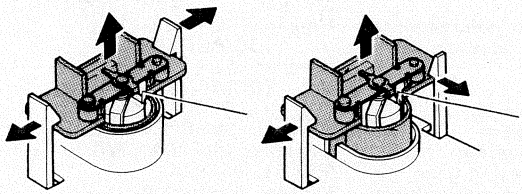


Fig. 2

3. Be careful when removing the tuner PC Board so that the dial drum does not slip off the dial drum rest.
(See figure 3)

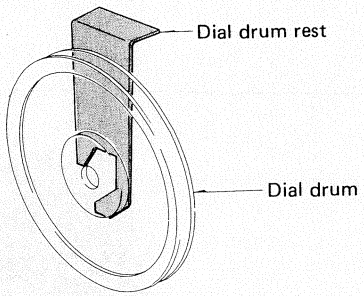


Fig. 3

4. Be sure to re-install the radio chassis after checking that the tuner PC Board is inserted into the rib of the rear lid.
(See figure 4)

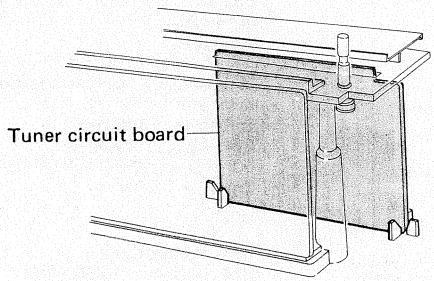
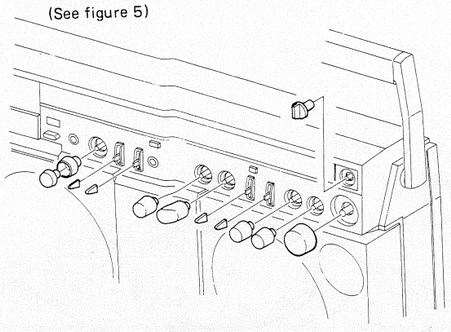


Fig. 4

REMOVING PARTS

1. Removing the Main Cabinet

1) Remove 12 knobs and 8 screws.
(See figure 5)



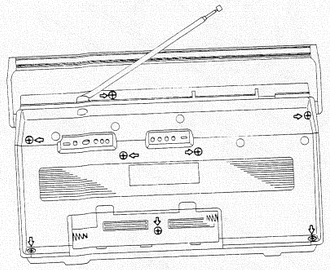


Fig. 5

2) Press the eject button, and put the set down with the cassette lid kept open.
(See figure 6)

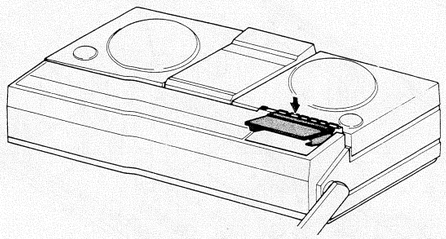


Fig. 6

3) Lift up the main cabinet. The mechanism, REC/PB PC Board and the tuner PC Board are fixed to the rear cabinet at that time.
(See figure 7)

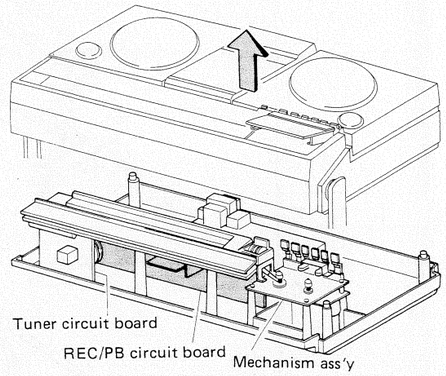


Fig. 7

4) Remove 2 nylon rivets to remove the MS PC Board.
(See figure 8)

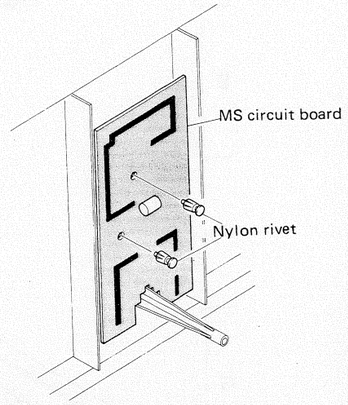


Fig. 8

5) Remove the speaker and ECM connectors.
(See figure 9)

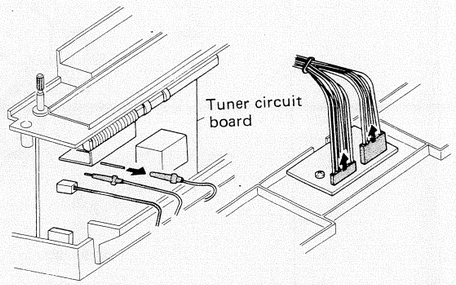


Fig. 9

2. Removing the Mechanism

1) Loosen the screw to remove the hook of the rod.
(See figure 10)

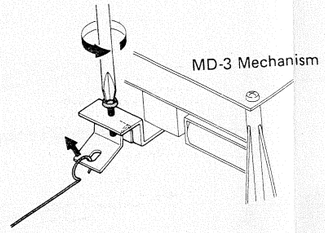


Fig. 10

2) Remove 4 screws.
(See figure 11)

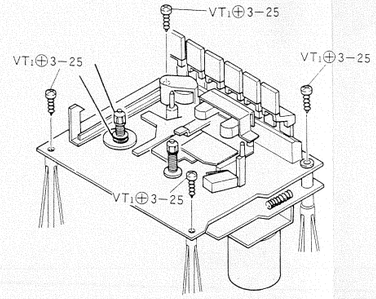
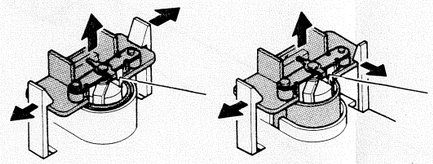


Fig. 11

3. Removing the Radio Chassis

1) Remove the level meter. (See figure 2)
2) Remove 3 screws. (See figure 12)



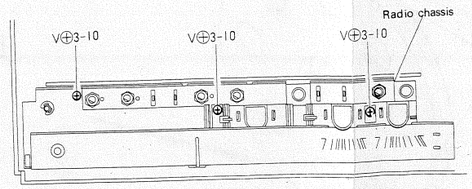


Fig. 12

3) Pull the radio chassis in the direction of the arrow.
(See figure 13)

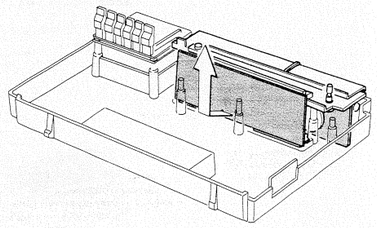


Fig. 13

4. Removing the Tuner PC Board

1) Remove the screw from the dial drum.
(See figure 14)

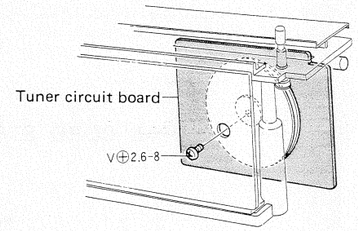


Fig. 14

2) Remove 2 screws.
(See figure 15)

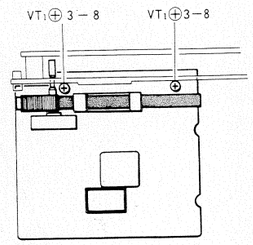
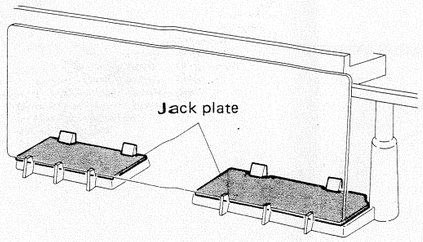


Fig. 15

5. Installing the Radio Chassis

1) Hook the jack plate to the tabs on the rear cabinet while paying attention to prevent the wire from engaging, and push up the radio chassis from the back.
(See figure 16)



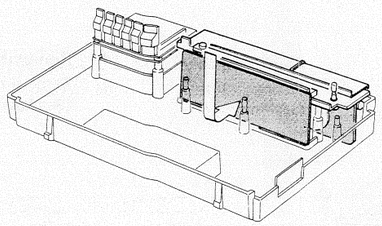


Fig. 16

Check that the tuner PC Board is inserted into the rib at that time. (See figure 17)

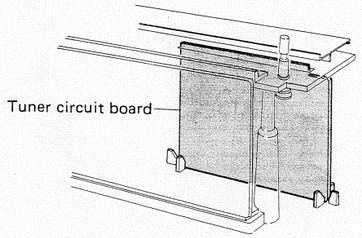
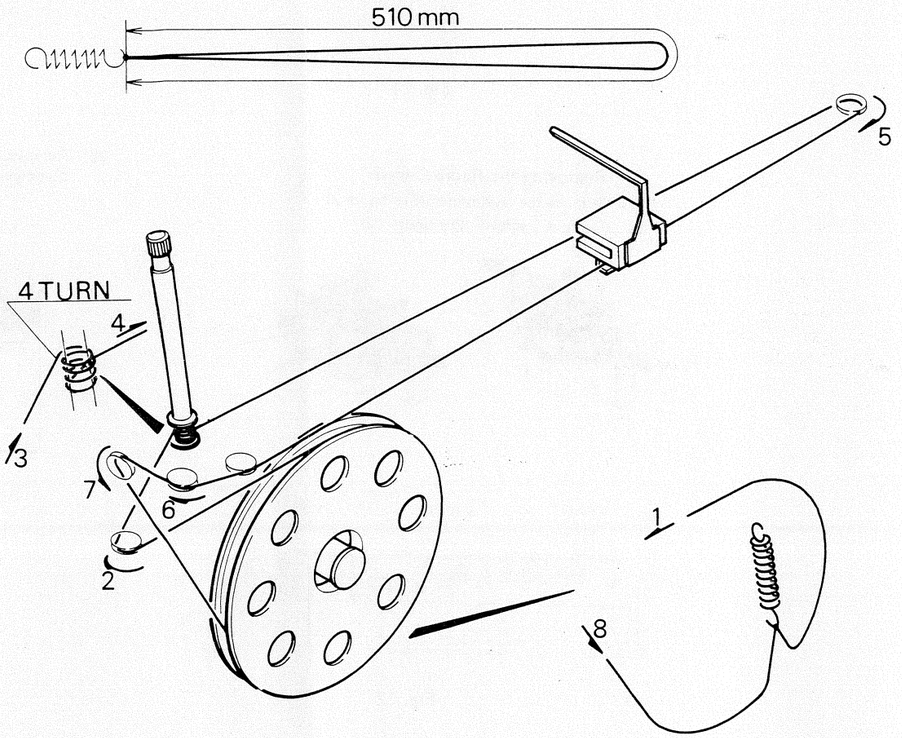
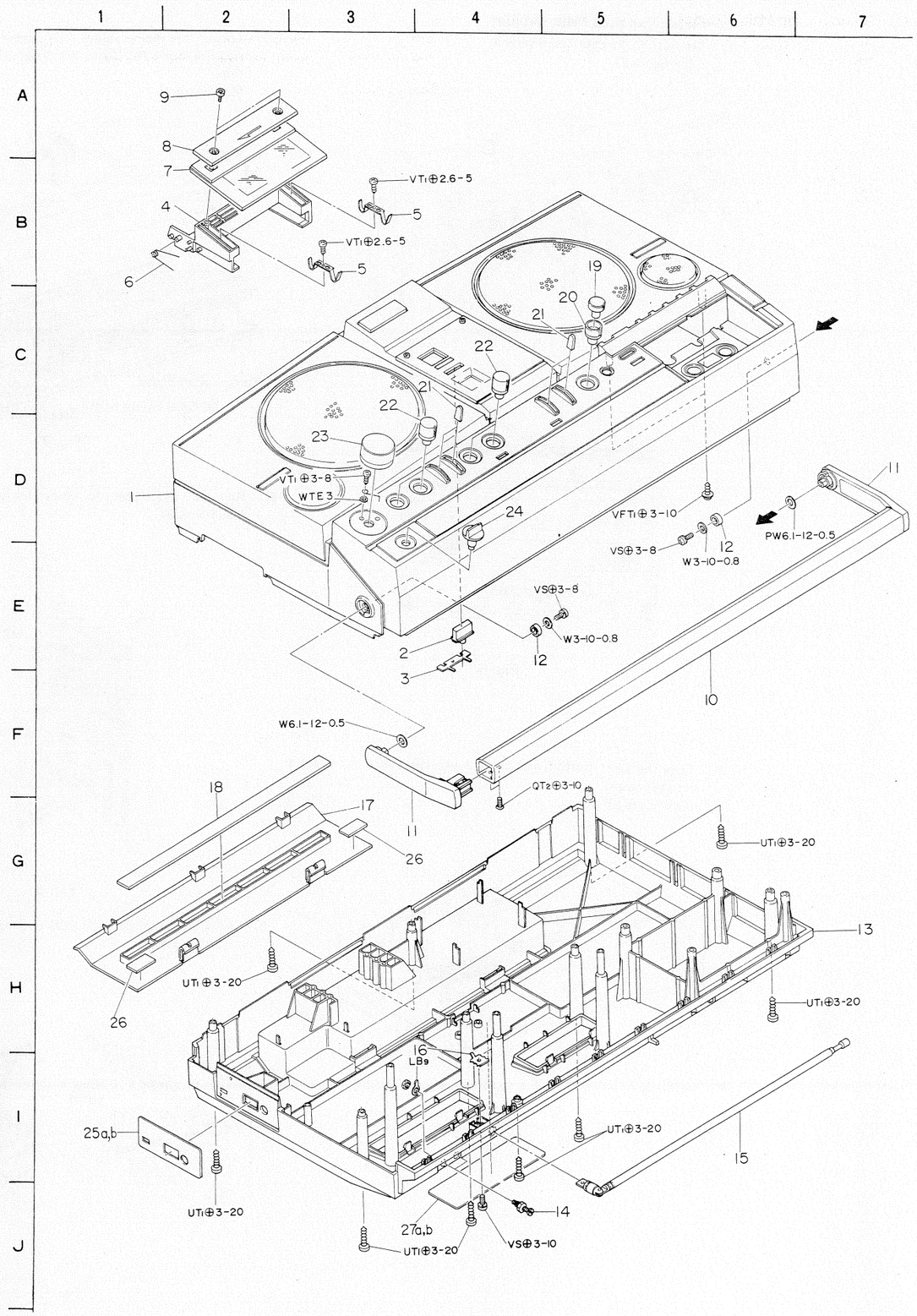


Fig. 17

DIAL CORD STRINGING



EXPLODED VIEW–1



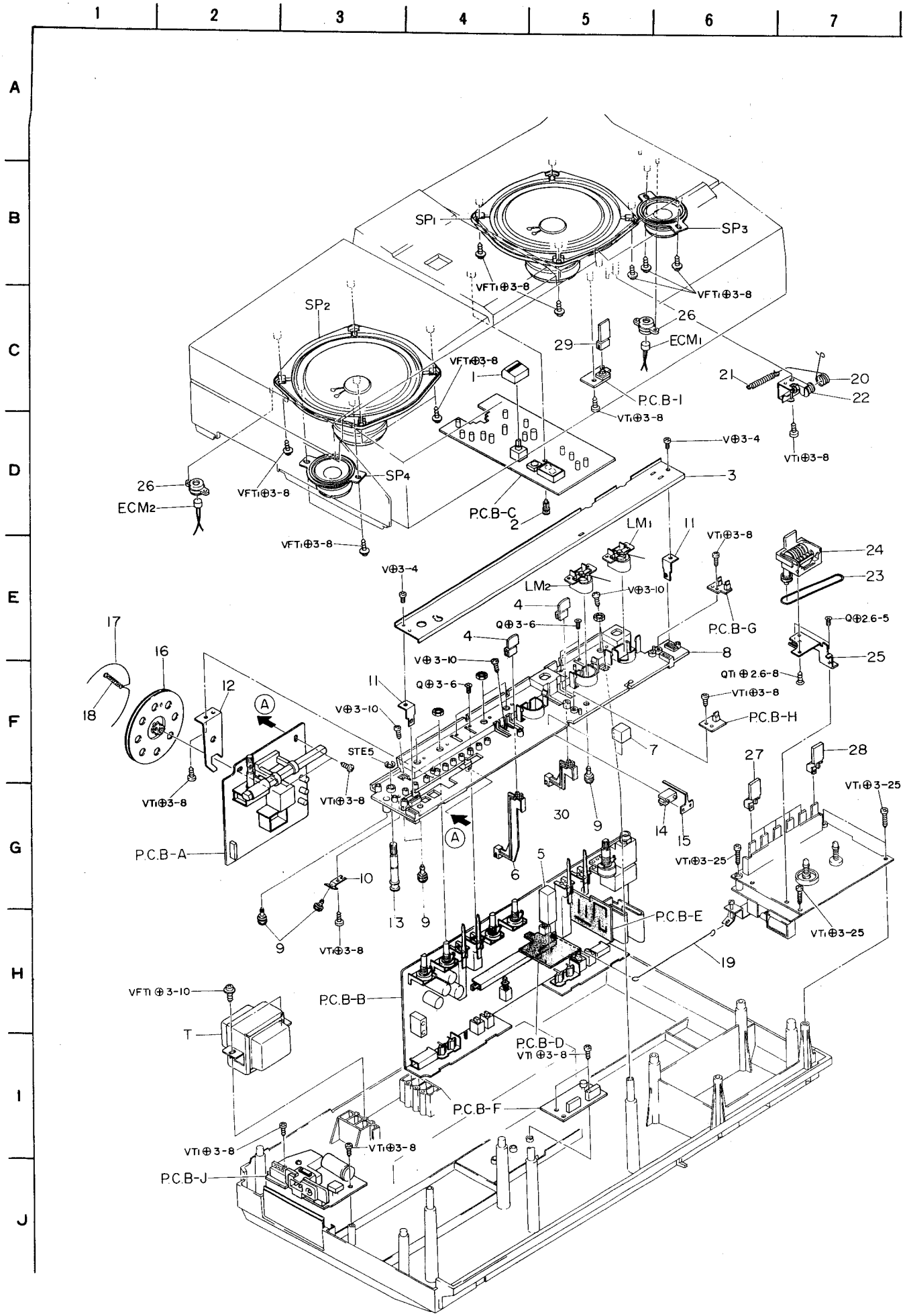
PARTS LIST

MECHANICAL PARTS

■ * mark in this part list shows exclusive part.

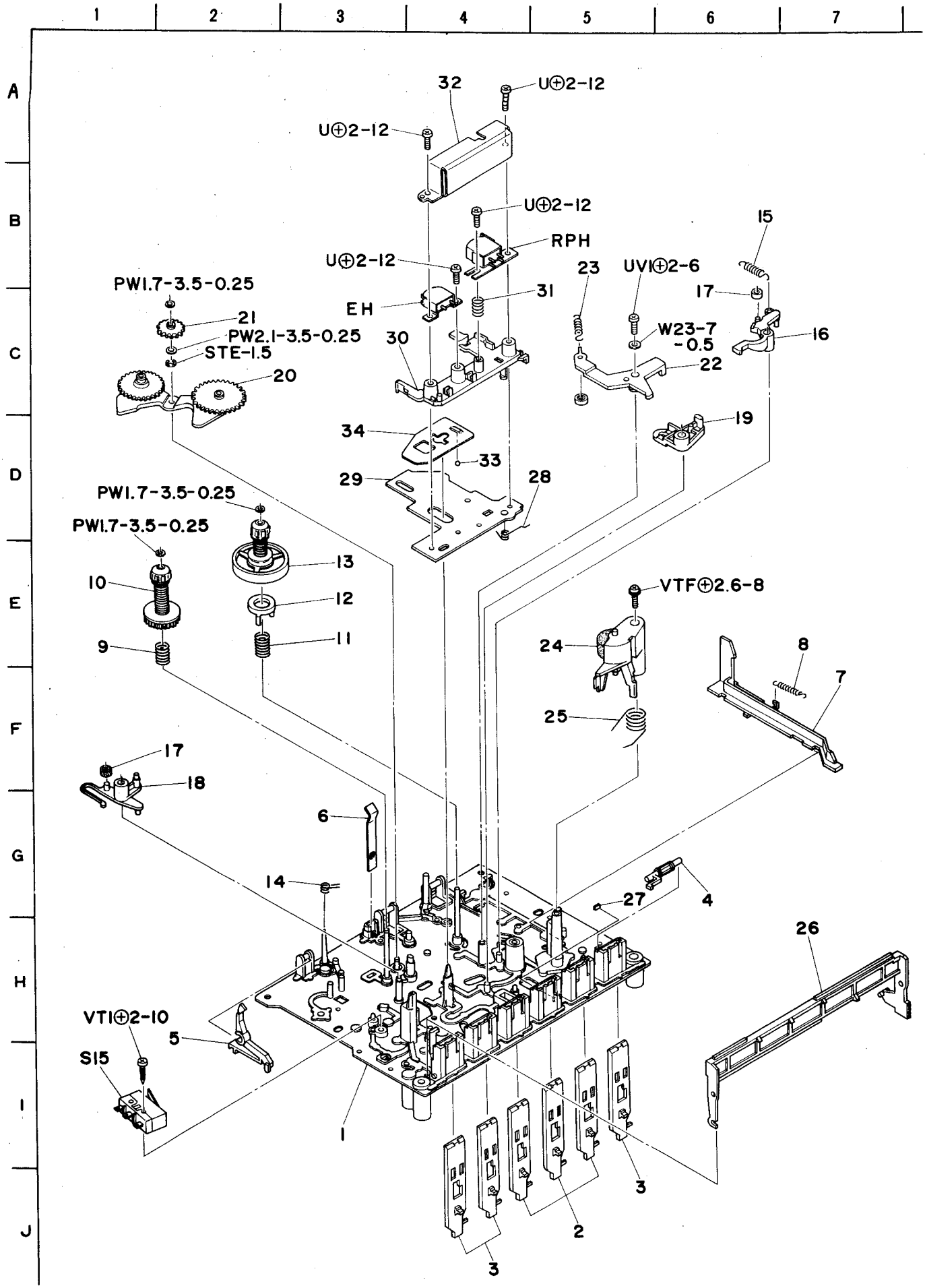
Ref. No.	Part No.	Part No. Changed to	Description	Common Model	Q'ty
1-1	09-017-852-01		Main cabinet ass'y	*	1
	82-588-044-01		Main cabinet ass'y	*	1
	82-588-011-01		Grille, Tweeter	*	2
	82-588-012-01		Panching, Tweeter	*	2
	82-588-010-01		Ring, Woofer	*	2
	82-572-010-01		Panching, Speaker		2
	82-588-017-01		Heating	*	2
	82-563-032-01		Cassette plate	CS-990	1
	82-588-003-01		Window, Dial	*	1
	82-588-019-01		Window, Light	*	1
	82-588-037-01		Plate, LED	*	1
	82-588-038-01		Badge, AIWA	*	1
	82-588-043-01		Panel A, Front	*	1
	82-588-006-01		Panel B, Front	*	1
	82-588-004-01		Window, MS	*	1
	87-081-979-01		Decorative screw 3-12		2
	82-588-024-01		Badge, MS		1
	87-351-074-01		UT_1 + 2.6-8		3
1-2	82-588-023-01		Button, MS	*	1
1-3	82-747-206-01		Plate spring B	ST-R50	1
1-4	82-587-202-01		Cassette box	CS-880	1
1-5	82-587-219-01		P-spring, Cassette holder	CS-880	2
1-6	82-587-218-01		T-spring, Cassette lid	CS-880	1
1-7	82-587-004-01		Window, Cassette	CS-880	1
1-8	82-587-050-01		Decorative panel, Cassette	CS-880	1
1-9	87-081-979-01		Decorative screw 3-12		2
1-10	82-588-013-01		Handle grip	*	1
1-11	82-571-036-01		Handle	TPR-968	2
1-12	82-571-234-01		Felt, Carrying	TPR-968	2
1-13	09-017-838-01		Back cover ass'y	*	1
	82-588-002-01		Back cover	*	1
	82-587-213-01		C-spring, Terminal A	CS-880	1
	82-587-214-01		C-spring, Terminal B	CS-880	1
	82-587-215-01		Battery terminal plate	CS-880	2
	87-351-095-01		UT_1 + 3-8 (Chrome)		1
1-14	87-033-167-01		Terminal, External antenna	*	2
1-15	82-588-620-01		Whip antenna	*	1
1-16	82-587-220-01		Terminal plate, Antenna	CS-880	1
1-17	82-587-005-01		Battery room lid	CS-880	1
1-18	82-588-215-01		Cushion, Battery room lid	*	1
1-19	82-587-023-01		Knob, VOLUME (UP)	CS-880	1
1-20	82-587-024-01		Knob, VOLUME (DOWN)	CS-880	1
1-21	82-563-014-01		Knob, Toggle	CS-990	4
1-22	82-587-017-01		Knob	CS-880	4
1-23	82-588-021-01		Knob, Tuning	*	1
1-24	82-577-018-01		Knob, Band	TPR-936	1
1-25a	82-587-025-01		Jack plate, Power (E model only)	CS-880	1
1-25b	82-587-041-01		Jack plate, Power (K model only)	CS-880	1
1-26	87-063-116-01		Cushion, 30-15		2
1-27a	82-588-026-01		Name plate, Spec. (E model only)	*	1
1-27b	82-588-027-01		Name plate, Spec. (K model only)	*	1

EXPLODED VIEW–2



Ref. No.	Part No.	Part No. Changed to	Description	Common Model	Q'ty	
2-1	82-588-022-01		Button, Low-boost	*	1	
2-2	87-085-090-01		Nylon rivet 3-6.5		1	
2-3	82-588-033-01		Dial plate	*	1	
2-4	82-588-015-01		Push-button	*	2	
2-5	82-588-209-01		Cushion 15-15-41	*	1	
2-6	82-587-206-01		Rod 87.8	CS-880	1	
2-7	82-588-205-01		Cushion	*	1	
2-8	82-588-212-01		Chassis	*	1	
2-9	87-071-019-01		Roller (ϕ7)		5	
2-10	82-588-203-01		Pulley holder	*	1	
2-11	82-587-207-01		Holder, Dial plate	CS-880	2	
2-12	82-588-204-01		Holder, Drum	*	1	
2-13	82-588-201-01		Shaft, Tuning	*	1	
2-14	82-563-214-01		Holder, Tuning	CS-990	1	
2-15	82-588-009-01		Tuning pointer	*	1	
2-16	82-570-204-01		Drum, Dial		1	
2-17	87-096-045-01		Dial string		1	
2-18	82-541-291-01		E-spring, Dial	TPR-950	1	
2-19	82-588-202-01		Rod, REC	*	1	
2-20	87-096-045-01		Dial string		1	
2-21	82-563-247-01		E-spring, Air-damp	CS-990	1	
2-22	87-078-003-01		Air-damp unit ass'y		1	
2-23	82-587-209-01		Belt, Counter	CS-880	1	
2-24	87-040-143-01		Counter		1	
2-25	82-587-203-01		Holder, Counter	CS-880	1	
2-26	87-064-084-01		Holder, ECM 30		2	
2-27	82-587-018-01		Push-key, Tape recorder	CS-880	5	
2-28	82-587-037-01		Push-key, REC	CS-880	1	
2-29	82-587-019-01		Push-key, REC mute	CS-880	1	
2-30	82-587-254-01		Rod 38.3	CS-880	1	

EXPLODED VIEW–3

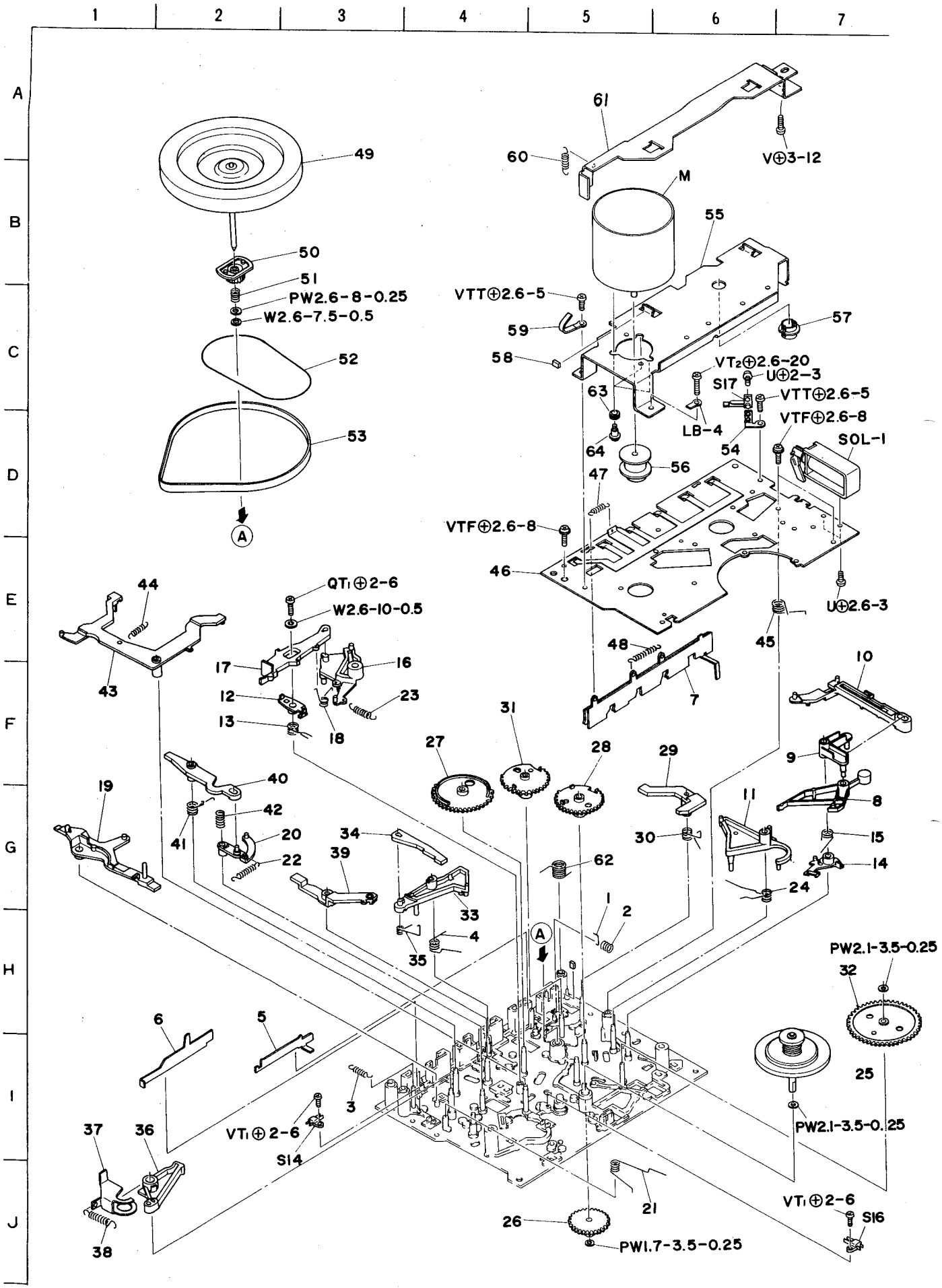


Ref. No.	Part No.	Part No. Changed to	Description	Common Model	Q'ty	
3-1	82-585-325-01		Outsert chassis		1	
3-2	82-585-277-01		Plate button, FR		3	
3-3	82-585-337-01		Plate button, REC		3	
3-4	82-585-279-01		Lever A, Eject		1	
3-5	82-585-255-01		REC blocking lever		1	
3-6	82-585-319-01		P-spring, Cassette pressure		1	
3-7	82-585-254-01		Slide plate, Eject		1	
3-8	82-585-311-01		E-spring, Lid lock		1	
3-9	82-585-290-01		C-spring, Back tension		1	
3-10	82-585-215-01		Supply reel platform ass'y		1	
3-11	82-585-292-01		C-spring, Slip disk		1	
3-12	82-585-272-01		Slip disk T		1	
3-13	82-585-210-01		Take-up reel platform ass'y		1	
3-14	82-585-294-01		T-spring, Center shift		1	
3-15	82-585-312-01		E-spring, Brake R		1	
3-16	82-585-253-01		Lever, Brake R		1	
3-17	82-585-286-01		Rubber cushion, Brake		2	
3-18	82-585-252-01		Lever, Brake L		1	
3-19	82-585-265-01		REV lever		1	
3-20	82-585-231-01		FR lever ass'y		1	
3-21	82-585-235-01		Gear A, REW		1	
3-22	82-585-223-01		Play idler lever ass'y		1	
3-23	82-585-313-01		F-spring, Play idler		1	
3-24	82-585-364-01		Pinch lever B ass'y		1	
3-25	82-585-296-01		T-spring, Pinch lever		1	
3-26	82-585-340-01		Plate lock ass'y		1	
3-27	82-585-338-01		Rubber cushion, Play lever		1	
3-28	82-585-295-01		T-spring, Actuating		1	
3-29	82-585-208-01		Actuating chassis		1	
3-30	82-585-209-01		Head base		1	
3-31	82-585-291-01		C-spring, RPH		1	
3-32	82-588-628-01		Shield plate	*	1	
3-33	87-073-005-01		Steel ball 2ϕ		1	
3-34	82-585-284-01		P-spring, Actuating		1	

CAUTION

Please refer to service manual for CS-880 in regard to description of the MD-3 mechanism, caution on disassembling MD-3 mechanism and spring allocation position, which are in common with CS-880.

EXPLODED VIEW–4



Ref. No.	Part No.	Part No. Changed to	Description	Common Model	Q'ty	
4-1	82-585-289-01		Shaft lock		1	
4-2	82-585-285-01		C-spring lock		1	
4-3	82-585-317-01		E-spring, Button lock		1	
4-4	82-585-306-01		T-spring, Play lever		1	
4-5	82-585-283-01		Slide plate, FR auto		1	
4-6	82-585-282-01		Slide plate, Motor switch		1	
4-7	82-585-327-01		Slide plate key ass'y		1	
4-8	82-585-268-01		Auto A lever		1	
4-9	82-585-269-01		Auto B lever		1	
4-10	82-585-270-01		Plate auto kick		1	
4-11	82-585-248-01		Lever, PAUSE		1	
4-12	82-585-264-01		FR lever D		1	
4-13	82-585-297-01		T-spring, FR lever A		1	
4-14	82-585-271-01		Auto eject lever		1	
4-15	82-585-299-01		T-spring, Auto eject		1	
4-16	82-585-262-01		FR lever B		1	
4-17	82-585-263-01		FR lever C		1	
4-18	82-585-298-01		T-spring, FR lever B		1	
4-19	82-585-261-01		Trigger lever, REC		1	
4-20	82-585-260-01		Lever, REW		1	
4-21	82-585-303-01		T-spring, Trigger (REC)		1	
4-22	82-585-308-01		E-spring, REW lever		1	
4-23	82-585-341-01		E-spring, FR lever		1	
4-24	82-585-300-01		T-spring, FR cam		1	
4-25	82-585-217-01		Slip pulley FR ass'y		1	
4-26	82-585-216-01		Drive gear		1	
4-27	82-585-244-01		Play cam gear		1	
4-28	82-585-245-01		FR cam gear		1	
4-29	82-585-256-01		Trigger lever, PAUSE		1	
4-30	82-585-304-01		T-spring, Trigger (PAUSE)		1	
4-31	82-585-246-01		Gear, PAUSE		1	
4-32	82-585-247-01		Gear, Auto kick		1	
4-33	82-585-249-01		PLAY lever		1	
4-34	82-585-250-01		Lever, REC drive		1	
4-35	82-585-307-01		T-spring, REC lever		1	
4-36	82-585-266-01		REC A lever		1	
4-37	82-585-267-01		REC B lever		1	
4-38	82-585-314-01		E-spring, REC		1	
4-39	82-585-258-01		Trigger lever, PLAY		1	
4-40	82-585-259-01		Trigger lever, REW		1	
4-41	82-585-308-01		T-spring, REW lever		1	
4-42	82-585-331-01		C-spring, REW lever		1	
4-43	82-585-257-01		FF trigger lever		1	
4-44	82-585-301-01		E-spring, Trigger PLAY		1	
4-45	82-585-321-01		T-spring, Auto kick		1	
4-46	82-585-203-01		Mechanism chassis B ass'y		1	
4-47	82-585-315-01		E-spring, Slide plate		1	
4-48	82-585-332-01		E-spring, REC lock		1	
4-49	82-585-229-01		Flywheel ass'y		1	
4-50	82-585-243-01		Gear, Flywheel		1	
4-51	82-585-324-01		C-spring, Flywheel		1	
4-52	82-585-336-01		Rubber belt FR B		1	
4-53	82-585-287-01		Rubber belt, Flywheel		1	
4-54	82-585-323-01		Holder, Pause switch		1	
4-55	82-585-281-01		Holder, Motor		1	
4-56	82-585-242-01		Motor pulley		1	
4-57	82-585-326-01		Thrust bearing B		1	
4-58	82-588-206-01		Rubber cushion, REC lever	*	1	
4-59	87-038-039-01		Wire binder		1	
4-60	82-587-241-01		E-spring, Slide plate		1	
4-61	82-587-228-01		Slide plate REC ass'y		1	
4-62	82-585-335-01		T-spring, Plate lock		1	
4-63	87-087-029-01		Rubber cushion		3	
4-64	87-081-483-01		Motor screw, M2.6		3	

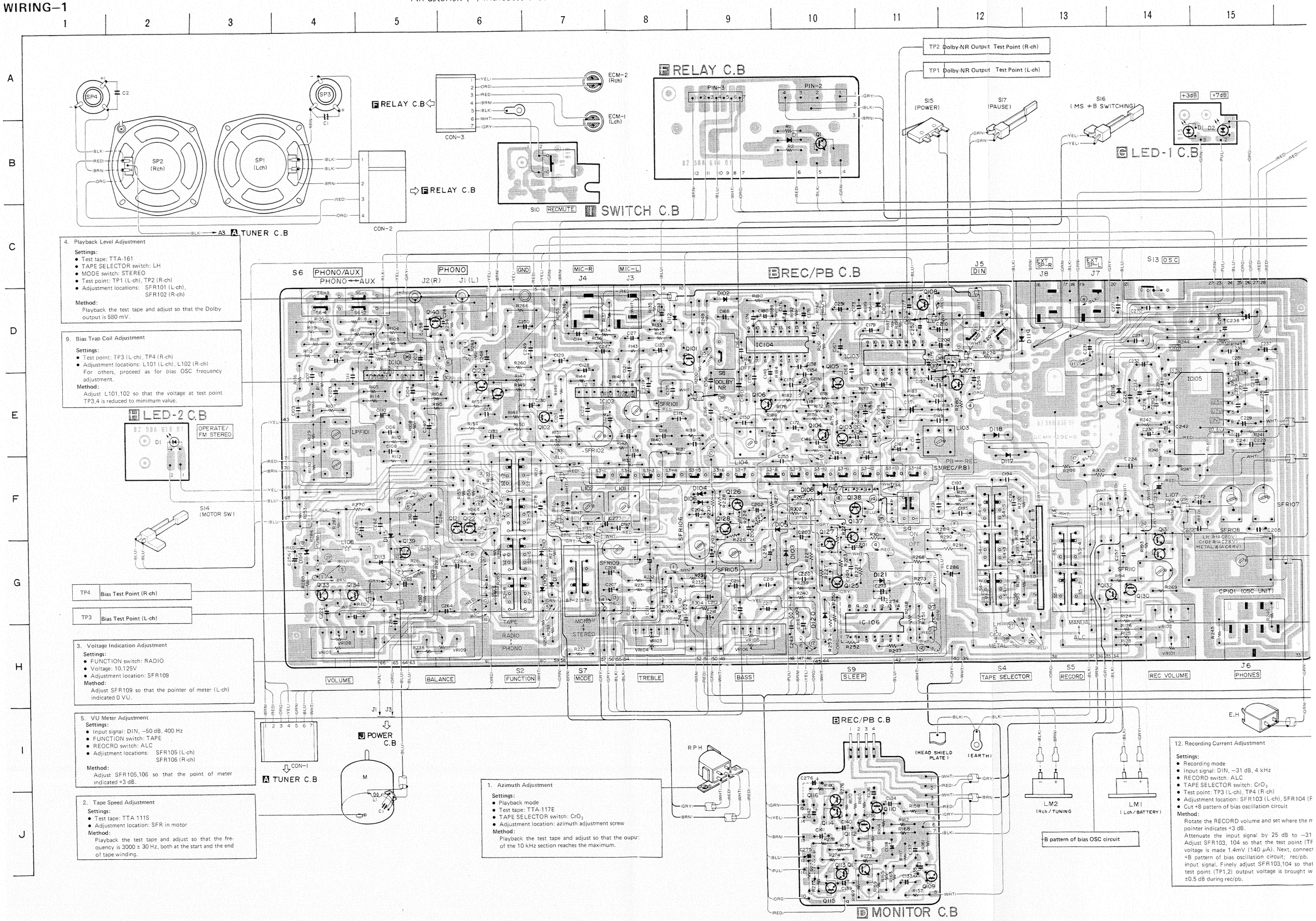
ACCESSORIES/PACKAGE

Ref. No.	Part No.	Part No. Changed to	Description	Common Model	Q'ty
1	82-588-855-01		Printed indiv., Packing	*	1
2	82-588-852-01		Cushion L, Printed indiv.	*	1
3	*82-588-853-01*		*Cushion R, Printed indiv.*	*	*1*
4	87-051-137-11		Poly-vinyl sack		1
5	87-056-615-01		Poly-vinyl sack		1
6a	82-588-907-01		Instructions booklet (E model only)	*	1
6b	82-588-908-01		Instructions bookelt (K model only)	*	1
7	82-588-906-01		Sticker, POP	*	1
8	87-051-171-11		Poly-vinyl sack (for instruction)		1
9	87-056-009-41		Distributors list		1
10	87-056-008-11		Label, AC power cord (K model only)		1
11	87-056-016-01		Tag, Main voltage (K model only)		1
12	82-916-740-01		Tape cassette, DMC-164		1
13a	87-034-883-01		AC power cord (E model only)		1
13b	87-034-871-01		AC power cord (K model only)		1

AIWA

NOTES (1) B(+) Pattern Others pattern
(2) The voltage is the reference value measured with a tester (20 K ohms/V DC) when there are no signals.
An asterisk (*) indicates that the value was measured with a vacuum-tube voltmeter during recording.

WIRING–1



NOTES (1) B(+) Pattern Others pattern
(2) The voltage is the reference value measured with a tester (20 K ohms/V DC) when there are no signals.
An asterisk (*) indicates that the value was measured with a vacuum-tube voltmeter during recording.

5 6 7 8 9 10 11 12 13 14 15 16 17 18 19

RELAY C.B
CON-3
ECM-2 (Rch)
ECM-1 (Lch)
CON-2
SW10 REC/MUTE
SWITCH C.B
TP2 Dolby-NR Output Test Point (R-ch)
TP1 Dolby-NR Output Test Point (L-ch)
SW15 (POWER)
SW17 (PAUSE)
SW16 (MS +B SWITCHING)
+3dB +7dB
LED-1 C.B
SOL-1
MS C.B
REC/PB C.B
J5 DIN
J8 EXT SP-R
J7 EXT SP-L
SW13 OSC
AUX
PHONO J2(R) J1(L)
GND
MIC-R J4
MIC-L J3
S6 S8 S9 S4 S5 S7 S2 S1
BALANCE FUNCTION MODE TREBLE BASS SLEEP TAPE SELECTOR RECORD REC VOLUME PHONES J6
DOLBY NR
TAPE RADIO PHONO
MONO STEREO
METAL
MANUAL ALC
SW4 TAPE SELECTOR
SW5 RECORD
J1 J3
POWER C.B
M
RPH
REC/PB C.B
(HEAD SHIELD PLATE)
(EARTH)
MONITOR C.B
LM2 (Rch/TUNING)
LM1 (Lch/BATTERY)
E.H
REC AMP C.B

11. Dolby-NR Trap Coil Adjustment
Settings:
- Input signal: DIN, 4 kHz, –6 dB
- Test point: TP1 (L-ch), TP2 (R-ch)
- Dolby-NR switch: ON
- Adjustment locations: L103 (L-ch), L104 (R-ch)
For others, proceed as for bias OSC frequency adjustment.
Method:
Adjust L103,104 so that the bias leakage to the test points (TP1,2) is brought to the maximum.

10. Bias Current Adjustment
Settings:
- Test point: TP3 (L-ch), TP4 (R-ch)
- Adjustment locations: SFR107 (L-ch), SFR108 (R-ch)
For others, proceed as for bias OSC frequency adjustment.
Method:
Adjust SFR107,108 so that the voltage at test point TP3,4 is 53 mV (530 μA).
Ratings:
- LH ..... 40 mV (400 μA)
- METAL ..... 74 mV (740 μA)

TP5 Bias OSC Frequency Test Point

8. Bias Frequency Adjustment
Settings:
- Recording mode
- Test point: TP5
- OSC switch: "–" position
- TAPE SELECTOR switch: CrO_2
- Adjustment location: CP101
Method:
Adjust CP101 so that the frequency at test point TP5 is 62 ± 0.3 kHz.
Check that the frequency changes when the OSC switch is selected.

6. ALC Balance Adjustment
Settings:
- Recording mode
- Input signal: DIN, –60 dB, 400 Hz
- RECORD switch: ALC
- Test point: TP1 (L-ch), TP2 (R-ch)
- Adjustment location: SFR110
Method:
Adjust SFR110 so that the Dolby output becomes the same for both left and right channels.

1. Azimuth Adjustment
Settings:
- Playback mode
- Test tape: TTA-117E
- TAPE SELECTOR switch: CrO_2
- Adjustment location: azimuth adjustment screw
Method:
Playback the test tape and adjust so that the ouput of the 10 kHz section reaches the maximum.

+B pattern of bias OSC circuit

12. Recording Current Adjustment
Settings:
- Recording mode
- Input signal: DIN, –31 dB, 4 kHz
- RECORD switch: ALC
- TAPE SELECTOR switch: CrO_2
- Test point: TP3 (L-ch), TP4 (R-ch)
- Adjustment location: SFR103 (L-ch), SFR104 (R-ch)
- Cut +8 pattern of bias oscillation circuit
Method:
Rotate the RECORD volume and set where the meter pointer indicates +3 dB.
Attenuate the input signal by 25 dB to –31 dB. Adjust SFR103, 104 so that the test point (TP3,4) voltage is made 1.4mV (140 μA). Next, connect the +B pattern of bias oscillation circuit; rec/pb. the input signal; Finely adjust SFR103,104 so that the test point (TP1,2) output voltage is brought within ±0.5 dB during rec/pb.

CS-770E,K

CS-770E,K

NOTES (1) ▒▒ B(+) Pattern ▒▒ Others pattern

(2) The voltage is the reference value measured with a tester (20 K ohms/V DC) when there are no signals.
But ( ) is with AM reception.

WIRING–2

Notes: IC TA7323AP rank

Rank	Method
O rank	R54 : Cut
Y rank	R54 : Connect

(WHIP ANTENNA)

TC4 (MW ANT TRIMMER)

TC1 (FM ANT TRIMMER)

TC7 (SW OSC TRIMMER)

TC2 (FM OSC TRIMMER)

FM EXTERNAL ANTENNA

A TUNER C.B

1. FM IF
L9 ..... 10.7 MHz

11. V.C.O. Frequency Adjustment
Settings:
- Input signal: 60 dB, 98 MHz
- Adjustment location: SFR1

Method:
Adjust SFR1 so that the frequency becomes 76 ± 0.1 kHz.
Insert a 100 kΩ resistor in series with TP6 and connect a counter.

5. SW Freq. Range Adj.
L6 ..... 5.8 MHz
TC6 ..... 18.5 MHz

7. MW Freq. Range Adj.
L7 ..... 515 kHz
TC7 ..... 1,650 kHz

2. FM Freq. Range Adj.
L2 ..... 87.4 MHz
TC2 ..... 108.3 MHz

TP1	FM RF Input

TP2	FM IF Input

3. FM Tracking Adj.
L1 ..... 88.0 MHz
TC1 ..... 108.0 MHz

6. SW Tracking Adj.
L3 ..... 5.9 MHz
TC3 ..... 18.0 MHz

8. LW Tracking Adj.
L5 ..... 150 kHz
TC5 ..... 300 kHz

10. MW Tracking Adj.
L4 ..... 600 kHz
TC4 ..... 1,440 kHz

to SPEAKER FRAM EARTH

L4 (MW ANT) BAR ANTENNA L5 (LW ANT)

TP4	FM DET Output

TP5	AM DET Output

TP6	V.C.O Freq. Test Point

4. AM IF Adj.
IFT1, IFT2 ..... 468 kHz

9. LW Freq. Range Adj.
L8 ..... 145 kHz
TC8 ..... 320 kHz

TP3	AM IF Input

TP7	MS Program Interval Detection Time Test Point

T1(P,T)

F2 T125mA

S11 VOLTAGE SELECTOR

220~240V
110~120V

F1 T2A

J10 AC~

J9 DC13.5V

D501

POWER C.B

BATT SUM1x9 DC13.5V

B REC/PB C.B

13. MS Program Internal Detection Time Adjustment
Settings:
- Test point: TP7
- Adjustment location: SFR401

Method:
Adjust SFR401 so that the test point (TP7) frequency is brought to 385 ± 10 Hz.
Use a frequency counter with an input impedance of not less than 1MΩ.

7. Peak Indicator Adjustment
Settings:
- Input signal: MIC, –60 dB, 400 Hz
- TAPE SELECTOR switch: CrO_2
- RECORD switch: MANUAL
- Dolby-NR switch: ON
- Adjustment location: SFR402

Method:
Rotate the RECORD volume and set where the meter pointer indicates +3 dB.
Adjust SFR402 so that the +3 dB peak indicator lights dimly. Then check that the +3 dB indicator lights fully at –1 dB and the +7 dB LED lights at +4 dB with an input signal.

C MS C.B

D409 DIGITAL INDICATOR

S19 PROGRAM

S18 DSL

RECORD

DOLBY-NR

SFR401

SFR402

+) Pattern ▒▒ Others pattern

tage is the reference value measured with a tester (20 K ohms/V DC) when there are no signals.

) is with AM reception.

5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19

TA7323AP rank

nk	Method
	R54 : Cut
	R54 : Connect

(WHIP ANTENNA)

TC4 (MW ANT TRIMMER)

TC1 (FM ANT TRIMMER)

TC7 (SW OSC TRIMMER)

TC2 (FM OSC TRIMMER)

C.B

TP4	FM DET Output
TP5	AM DET Output
TP6	V.C.O Freq. Test Point

4. AM IF Adj.

IFT1, IFT2 ..... 468 kHz

9. LW Freq. Range Adj.

L8 ..... 145 kHz

TC8 ..... 320 kHz

TP3	AM IF Input

BAR ANTENNA L5 (LW ANT)

TP7	MS Program Interval Detection Time Test Point

T1(P,T)

F2 T125mA

S11 VOLTAGE SELECTOR 220~240V 110~120V

F1 T2A

J10 AC~

J9 DC13.5V

D501

POWER C.B

BATT SUMIx9 DC13.5V

B REC/PB C.B

13. MS Program Internal Detection Time Adjustment

Settings:
- Test point: TP7
- Adjustment location: SFR401

Method:
Adjust SFR401 so that the test point (TP7) frequency is brought to 385 ± 10 Hz.
Use a frequency counter with an input impedance of not less than 1MΩ.

7. Peak Indicator Adjustment

Settings:
- Input signal: MIC, −60 dB, 400 Hz
- TAPE SELECTOR switch: CrO_2
- RECORD switch: MANUAL
- Dolby-NR switch: ON
- Adjustment location: SFR402

Method:
Rotate the RECORD volume and set where the meter pointer indicates +3 dB.
Adjust SFR402 so that the +3 dB peak indicator lights dimly. Then check that the +3 dB indicator lights fully at −1 dB and the +7 dB LED lights at +4 dB with an input signal.

① F RELAY C.B
②
③ B REC/PB CB
④

MS C.B

D409 DIGITAL INDICATOR

S19 PROGRAM

S18 DSL

RECORD

DOLBY-NR

SFR401

SFR402

ELECTRICAL MAIN PARTS LIST

Symbol No.	Part No.	Description
≪TUNER CIRCUIT BOARD SECTION≫		
PCB-A	82-584-636-11	Tuner circuit board
IC1	87-027-734-01	IC, HA12413
IC2	87-027-507-01	IC, TA7323AP(OY)
Q1,2,4	89-319-233-01	Transistor, 2SC1923(O)
Q3	89-307-103-01	Transistor, 2SC710(C)
Q6,9	89-318-154-01	Transistor, 2SC1815(Y)
Q5,7	89-318-156-01	Transistor, 2SC1815(BL)
Q8	89-303-804-01	Transistor, 2SC380(Y)
D1	87-017-004-01	Diode, SD-117
D2	87-027-226-01	Zener diode, RD5.6EB
L1,2	82-584-639-01	FM antenna coil
L3	82-576-670-01	SW antenna coil
L4,5	82-584-642-01	MW/LW bar antenna coil
L6	82-584-643-01	SW OSC coil
L7	82-563-663-01	MW OSC coil
L8	82-563-664-01	LW OSC coil
L9	87-008-209-01	Quad coil
VC1~4 TC1,2,4,7	87-011-129-01	PVC
TC3,6	87-011-099-01	Trimmer, 8P
TC5	87-011-109-01	Trimmer, 15P
TC8	87-011-127-01	Trimmer, 30P
CF1,2	87-008-169-01	FM ceramic filter 230K
CF3	87-008-231-01	Ceramic filter CFM2-468BL
BPF1	87-030-081-01	Band pass filter 108
IFT1	87-008-232-01	IFT 468
IFT2	87-008-223-01	AM IFT
S1	82-588-635-01	Rotary switch (BAND SELECTOR)
SFR1	87-021-566-01	Semi-fixed resistor, 5kΩ-B
PIN1	87-049-044-01	Pin, 7P
	82-588-641-01	FM feeder cord
	87-032-981-01	Wire post
		< Capacitors >
C56	87-015-464-01	4.7μF 16V Electrolytic
C65,66	87-015-311-01	0.1μF 10V Aluminum solid
C58	87-015-312-01	0.22μF 10V Aluminum solid
C57	87-015-314-01	0.47μF 10V Aluminum solid
C33	87-014-035-81	120pF PP
C32	87-014-045-81	330pF PP
C59	87-014-057-41	1000pF PP
C34	87-014-069-01	3300pF PP
≪REC/PB CIRCUIT BOARD SECTION≫		
PCB-B	82-588-636-01	REC/PB circuit board
IC101,102	87-027-539-01	IC, LA3161
IC103,104	87-027-754-01	IC, LM1111C
IC105	87-027-540-01	IC, AN-7146
IC106	87-027-656-01	IC, TC4066BP
Q101,102, 105,106 121~132, 137,138,140 142	89-318-154-01	Transistor, 2SC1815 (Y)
Q103,104	89-322-405-01	Transistor, 2SC2240(GR)
Q107,108	89-318-155-01	Transistor, 2SC1815 (GR)
Q133,134	89-320-011-21	Transistor, 2SC2001 (K)
Q139	89-318-464-01	Transistor, 2SC1846 (R)
D101,102, 107~114, 117,118,120	87-027-097-01	Diode, 1S1555
D103~106	88-052-188-11	Diode, 1S188 (FM)
D115,121	87-027-346-01	Zener diode, HZ11A2L
D116	87-027-365-01	Diode, S5277B

Symbol No.	Part No.	Description
D119	87-027-393-01	Zener diode HZ-4C2
L101~104	82-487-654-01	Bias trap coil
L107	82-401-661-01	Choke coil, 600μH
L1,108	87-003-039-01	Choke coil, 36μH
L109,110	87-005-088-01	Choke coil, 5.6mH
CP101	82-587-641-11	Bias OSC unit
LPF101	87-030-070-01	Low-pass filter
J1,2,3,4	82-588-644-01	Jack plate ass'y (PHONO, MIC)
J5, S20	87-049-059-01	DIN jack, 5P w/switch (DIN)
J6	87-049-043-01	Jack, 6.3φ (PHONES)
J7,8	82-588-645-01	Jack plate ass'y (EXT SP)
VR101,102	87-021-671-01	Volume, 50kΩ-A (REC VOLUME)
VR103,104 105,106	87-021-668-01	Volume, 50kΩ-A (TREBLE, BASS)
VR107,108	87-021-667-01	Volume, 20kΩ-A (VOLUME)
VR109	87-021-669-01	Volume, 100kΩ-W (BALANCE)
S2	87-031-655-01	Lever switch (FUNCTION)
S3	82-588-622-01	Slide switch (REC/PB)
S4	87-031-631-01	Lever switch (TAPE SELECTOR)
S5	87-031-620-01	Lever switch (RECORD)
S6	82-563-609-01	Slide switch (PHONO/AUX)
S7	87-031-622-01	Lever switch (MODE)
S8,9	87-031-619-01	Push-switch (DOLBY-NR, POWER)
S13	82-431-604-01	Slide switch (OSC)
SFR101,102	82-587-634-01	Semi-fixed resistor, 100Ω-B
SFR105,106	87-021-565-01	Semi-fixed resistor, 2kΩ-B
SFR107,108, 109	87-021-624-01	Semi-fixed resistor, 50kΩ-B
SFR110	87-021-571-01	Semi-fixed resistor, 200kΩ-B
		< Resistors >
R243,244,285	87-025-313-01	4.7Ω Nonflammable resistor
R282	87-025-316-01	100Ω ½w Nonflammable resistor
R291	87-025-321-01	22Ω 2W Metal film resistor
R183,184	87-025-209-01	3.3kΩ ±1% Metal film resistor
⚠R286	87-029-108-01	1Ω ½w Fuse resistor
⚠R262	87-029-060-01	33Ω ¼w Fuse resistor
		< Capacitors >
C175,176	87-015-311-01	0.1μF 10V Aluminum solid
C215,216	87-015-367-01	0.15μF 10V Aluminum solid
C207,208	87-015-312-01	0.22μF 10V Aluminum solid
C177,178 217,218 225	87-015-313-01	0.33μF 10V Aluminum solid
C149,150, 197,198	87-014-053-81	680pF PP
C117,118	87-014-055-01	820pF PP
≪MS CIRCUIT BOARD SECTION≫		
PCB-C	82-588-613-21	MS circuit board
IC351,352	87-027-176-01	IC, TA-7137P
IC401	87-027-713-01	IC, TC-9138P
Q351~356, 401~405, 409~412	89-318-154-01	Transistor, 2SC1815 (Y)
Q406	89-110-154-01	Transistor, 2SA1015 (Y)
Q413	89-106-834-51	Transistor, 2SA683(RS)
Q407,408	89-313-834-01	Transistor, 2SC1383 (S)
D401~407 410,411	87-027-097-01	Diode, 1S1555

Symbol No.	Part No.	Description
D408	87-027-332-01	Zener diode, HZ6B1L
D409	87-027-756-01	LED, SL1160L (MEMORY INDICATOR)
D412	87-027-732-01	LED, SG235D (DOLBY-NR)
D413	87-027-731-01	LED, SR-535D (REC)
D414	87-027-228-01	Zener diode, 05Z7.5U
S18	82-588-607-01	Push-switch (DSL)
S19	87-031-498-01	Push-switch (PROGRAM)
SFR401	87-021-624-01	Semi-fixed resistor, 50kΩ-B
SFR402	87-021-566-01	Semi-fixed resistor, 5kΩ-B
		< Capacitors >
C361,362	87-015-311-01	0.1μF 10V Aluminum solid
C412	87-015-367-01	0.15μF 10V Aluminum solid
C359,360	87-015-313-01	0.33μF 10V Aluminum solid
≪MONITOR CIRCUIT BOARD SECTION≫		
PCB-D	82-588-633-21	Monitor circuit board
Q109,110	89-322-405-01	Transistor, 2SC2240(GR)
Q111~116	89-318-154-01	Transistor, 2SC1815 (Y)
PIN	87-032-634-01	Pin, 4P
≪REC AMP CIRCUIT BOARD SECTION≫		
PCB-E	82-588-617-11	REC amp circuit board
Q117~120	89-318-154-01	Transistor, 2SC1815 (Y)
L105,106	87-005-088-01	Micro indictor, 5.6mH
SFR103,104	87-021-672-01	Semi-fixed resistor, 50kΩ-B
		< Capacitor >
C181,182	87-015-312-01	0.22μF 10V Aluminum solid
≪RELAY CIRCUIT BOARD SECTION≫		
PCB-F	82-588-614-11	Relay circuit board
Q1	89-110-154-01	Transistor, 2SA1015 (Y)
D1	87-027-097-01	Diode, 1S1555
PIN-2	82-481-647-01	Pin, 4P
PIN-3	87-049-044-01	Pin, 7P
≪LED-1 CIRCUIT BOARD SECTION≫		
PCB-G	82-588-615-11	LED-1 circuit board
D1,2	87-027-731-01	LED, SR535D (PEAK, +3dB, +7dB)
≪LED-2 CIRCUIT BOARD SECTION≫		
PCB-H	82-588-618-11	LED-2 circuit board
D1	87-027-731-01	LED, SR-535D (OPERATE/FM STEREO)
≪SWITCH CIRCUIT BOARD SECTION≫		
PCB-I	82-588-616-21	Switch circuit board
S10	86-992-604-01	Push-switch (REC MUTE)
≪POWER CIRCUIT BOARD SECTION≫		
⚠PCB-J	82-551-672-21	Power circuit board
D501	87-027-315-01	Encapsulated diode
⚠J10,11	87-032-958-01	DC, AC jack (DC13.5V, AC)
⚠S11	87-031-466-01	Slide switch (VOLTAGE SELECTOR)
F1	87-035-190-01	Fuse, "T" 2A
	87-098-019-01	Fuse label, "T" 2A
F2	87-035-186-01	Fuse, "T" 125mA
	87-098-007-01	Fuse label, "T" 125mA

Symbol No.	Part N
⚠	87-033-14
R501	87-025-19
≪MISCELLANEOUS≫	
⚠T1	82-588-63
SOL1	82-588-60
RPH	87-046-15
EH	87-046-18
SP1,2	82-588-60
SP3,4	82-571-64
LM1,2	82-588-64
M1	87-045-13
ECM1,2	87-041-01
	87-033-16
S14	87-031-54
S15	87-031-53
S16	87-031-61
S17	87-031-36
CON-2	82-588-61
CON-1	82-588-61
CON-3	82-588-60
C1,2	87-015-59

⚠ This symbol is given to maintain the safety of to conform to special safe replacing a component w sure that you use a designa

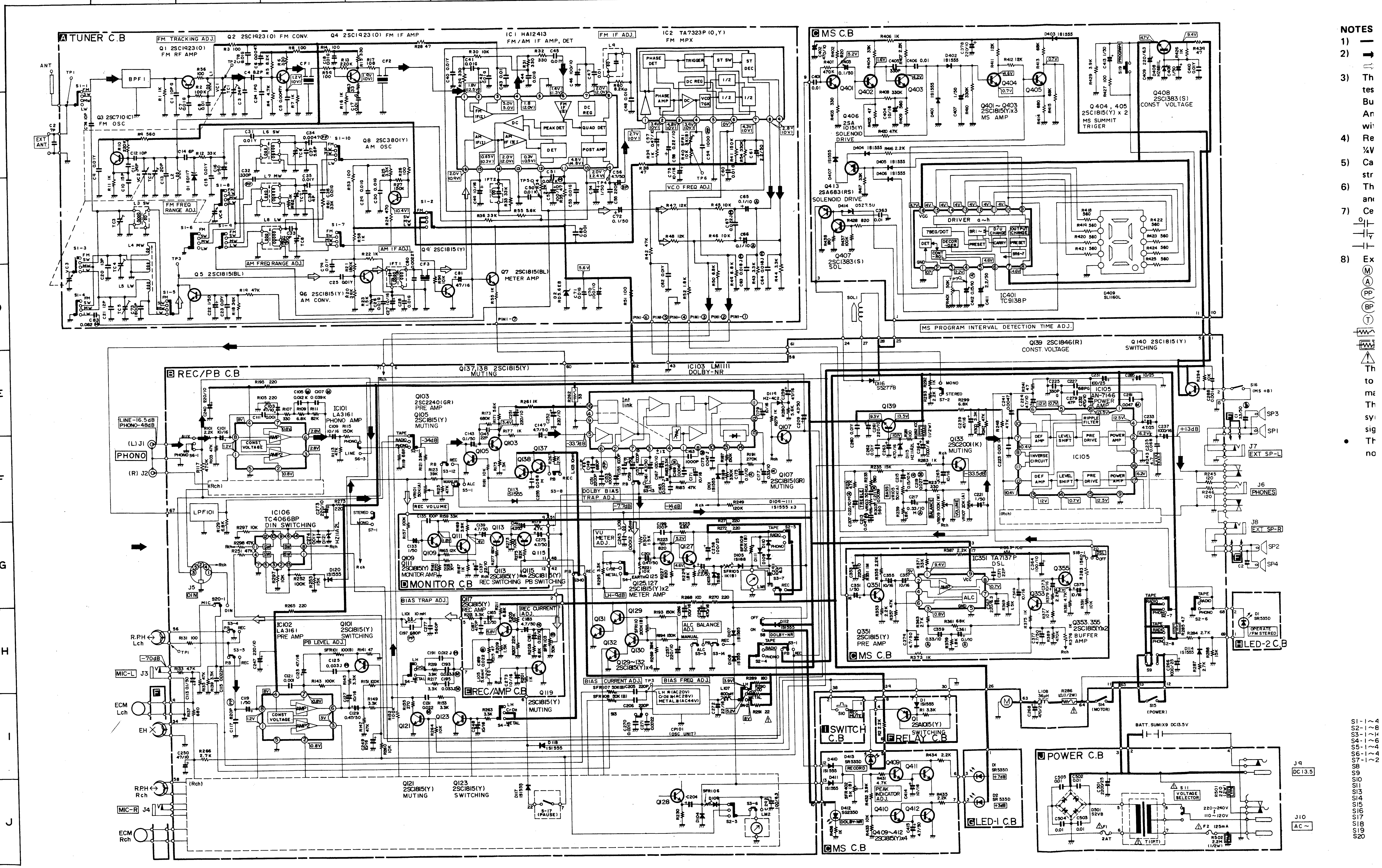
Symbol No.	Part No.	Description
D119	87-027-393-01	Zener diode HZ-4C2
L101~104	82-487-654-01	Bias trap coil
L107	82-401-661-01	Choke coil, 600μH
L1,108	87-003-039-01	Choke coil, 36μH
L109,110	87-005-088-01	Choke coil, 5.6mH
CP101	82-587-641-11	Bias OSC unit
LPF101	87-030-070-01	Low-pass filter
J1,2,3,4	82-588-644-01	Jack plate ass'y (PHONO, MIC)
J5, S20	87-049-059-01	DIN jack, 5P w/switch (DIN)
J6	87-049-043-01	Jack, 6.3φ (PHONES)
J7,8	82-588-645-01	Jack plate ass'y (EXT SP)
VR101,102	87-021-671-01	Volume, 50kΩ-A (REC VOLUME)
VR103,104 105,106	87-021-668-01	Volume, 50kΩ-A (TREBLE, BASS)
VR107,108	87-021-667-01	Volume, 20kΩ-A (VOLUME)
VR109	87-021-669-01	Volume, 100kΩ-W (BALANCE)
S2	87-031-655-01	Lever switch (FUNCTION)
S3	82-588-622-01	Slide switch (REC/PB)
S4	87-031-631-01	Lever switch (TAPE SELECTOR)
S5	87-031-620-01	Lever switch (RECORD)
S6	82-563-609-01	Slide switch (PHONO/AUX)
S7	87-031-622-01	Lever switch (MODE)
S8,9	87-031-619-01	Push-switch (DOLBY-NR, POWER)
S13	82-431-604-01	Slide switch (OSC)
SFR101,102	82-587-634-01	Semi-fixed resistor, 100Ω-B
SFR105,106	87-021-565-01	Semi-fixed resistor, 2kΩ-B
SFR107,108, 109	87-021-624-01	Semi-fixed resistor, 50kΩ-B
SFR110	87-021-571-01	Semi-fixed resistor, 200kΩ-B
		< **Resistors** >
R243,244,285	87-025-313-01	4.7Ω Nonflammable resistor
R282	87-025-316-01	100Ω ½w Nonflammable resistor
R291	87-025-321-01	22Ω 2W Metal film resistor
R183,184	87-025-209-01	3.3kΩ ±1% Metal film resistor
⚠ R286	87-029-108-01	1Ω ½w Fuse resistor
⚠ R262	87-029-060-01	33Ω ¼w Fuse resistor
		< **Capacitors** >
C175,176	87-015-311-01	0.1μF 10V Aluminum solid
C215,216	87-015-367-01	0.15μF 10V Aluminum solid
C207,208	87-015-312-01	0.22μF 10V Aluminum solid
C177,178 217,218 225	87-015-313-01	0.33μF 10V Aluminum solid
C149,150, 197,198	87-014-053-81	680pF PP
C117,118	87-014-055-01	820pF PP
≪MS CIRCUIT BOARD SECTION≫		
PCB-C	82-588-613-21	MS circuit board
IC351,352	87-027-176-01	IC, TA-7137P
IC401	87-027-713-01	IC, TC-9138P
Q351~356, 401~405, 409~412	89-318-154-01	Transistor, 2SC1815 (Y)
Q406	89-110-154-01	Transistor, 2SA1015 (Y)
Q413	89-106-834-51	Transistor, 2SA683(RS)
Q407,408	89-313-834-01	Transistor, 2SC1383 (S)
D401~407 410,411	87-027-097-01	Diode, 1S1555

Symbol No.	Part No.	Description
D408	87-027-332-01	Zener diode, HZ6B1L
D409	87-027-756-01	LED, SL1160L (MEMORY INDICATOR)
D412	87-027-732-01	LED, SG235D (DOLBY-NR)
D413	87-027-731-01	LED, SR-535D (REC)
D414	87-027-228-01	Zener diode, 05Z7.5U
S18	82-588-607-01	Push-switch (DSL)
S19	87-031-498-01	Push-switch (PROGRAM)
SFR401	87-021-624-01	Semi-fixed resistor, 50kΩ-B
SFR402	87-021-566-01	Semi-fixed resistor, 5kΩ-B
		< **Capacitors** >
C361,362	87-015-311-01	0.1μF 10V Aluminum solid
C412	87-015-367-01	0.15μF 10V Aluminum solid
C359,360	87-015-313-01	0.33μF 10V Aluminum solid
≪MONITOR CIRCUIT BOARD SECTION≫		
PCB-D	82-588-633-21	Monitor circuit board
Q109,110	89-322-405-01	Transistor, 2SC2240(GR)
Q111~116	89-318-154-01	Transistor, 2SC1815 (Y)
PIN	87-032-634-01	Pin, 4P
≪REC AMP CIRCUIT BOARD SECTION≫		
PCB-E	82-588-617-11	REC amp circuit board
Q117~120	89-318-154-01	Transistor, 2SC1815 (Y)
L105,106	87-005-088-01	Micro indictor, 5.6mH
SFR103,104	87-021-672-01	Semi-fixed resistor, 50kΩ-B
		< **Capacitor** >
C181,182	87-015-312-01	0.22μF 10V Aluminum solid
≪RELAY CIRCUIT BOARD SECTION≫		
PCB-F	82-588-614-11	Relay circuit board
Q1	89-110-154-01	Transistor, 2SA1015 (Y)
D1	87-027-097-01	Diode, 1S1555
PIN-2	82-481-647-01	Pin, 4P
PIN-3	87-049-044-01	Pin, 7P
≪LED-1 CIRCUIT BOARD SECTION≫		
PCB-G	82-588-615-11	LED-1 circuit board
D1,2	87-027-731-01	LED, SR535D (PEAK, +3dB, +7dB)
≪LED-2 CIRCUIT BOARD SECTION≫		
PCB-H	82-588-618-11	LED-2 circuit board
D1	87-027-731-01	LED, SR-535D (OPERATE/FM STEREO)
≪SWITCH CIRCUIT BOARD SECTION≫		
PCB-I	82-588-616-21	Switch circuit board
S10	86-992-604-01	Push-switch (REC MUTE)
≪POWER CIRCUIT BOARD SECTION≫		
⚠ PCB-J	82-551-672-21	Power circuit board
D501	87-027-315-01	Encapsulated diode
⚠ J10,11	87-032-958-01	DC, AC jack (DC13.5V, AC)
⚠ S11	87-031-466-01	Slide switch (VOLTAGE SELECTOR)
F1	87-035-190-01	Fuse, "T" 2A
	87-098-019-01	Fuse label, "T" 2A
F2	87-035-186-01	Fuse, "T" 125mA
	87-098-007-01	Fuse label, "T" 125mA

Symbol No.	Part No.	Description
⚠	87-033-147-01	Fuse clamp
		< **Resistor** >
R501	87-025-194-01	220Ω 2w Metal film resistor
≪MISCELLANEOUS≫		
⚠ T1	82-588-638-01	Power transformer
SOL1	82-588-603-21	Solenoid
RPH	87-046-159-01	REC/PB head
EH	87-046-189-01	Erase head
SP1,2	82-588-601-01	Speaker (woofer)
SP3,4	82-571-645-01	Speaker (Tweeter)
LM1,2	82-588-642-01	Level meter
M1	87-045-135-01	Motor, DC EG
ECM1,2	87-041-015-01	ECM, ESM-10PB
	87-033-167-01	Antenna terminal ass'y
S14	87-031-548-01	Leaf switch (MOTOR)
S15	87-031-537-01	Micro switch (POWER)
S16	87-031-615-01	Leaf switch (FF/REW MUTING)
S17	87-031-361-01	Leaf switch (PAUSE)
CON-2	82-588-611-01	Connector ass'y, 4P
CON-1	82-588-610-01	Connector ass'y, 7P
CON-3	82-588-608-01	Connector ass'y, 7P
		< **Capacitor** >
C1,2	87-015-590-01	3.3μF 50V Electrolytic BP

⚠ This symbol is given to important parts which serve to maintain the safety of the product, and which are made to conform to special safety specifications. Therefore, when replacing a component with this symbol, make absolutely sure that you use a designated part.

SCHEMATIC DIAGRAM


1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
A B C D E F G H I J
A TUNER C.B
FM TRACKING ADJ.
Q1 2SC1923(O) FM RF AMP
Q2 2SC1923(O) FM CONV.
Q3 2SC710(C) FM OSC
Q4 2SC1923(O) FM IF AMP
Q5 2SC1815(BL)
Q6 2SC1815(Y) AM CONV.
Q7 2SC1815(BL) METER AMP
Q8 2SC380(Y) AM OSC
Q9' 2SC1815(Y)
IC1 HA12413 FM/AM IF AMP, DET
IC2 TA7323P (O,Y) FM MPX
FM IF ADJ.
V.C.O FREQ ADJ.
FM FREQ RANGE ADJ.
AM FREQ RANGE ADJ.
AM IF ADJ.
C MS C.B
Q401~Q403 2SC1815(Y)x3 MS AMP
Q404, 405 2SC1815(Y) x 2 MS SUMMIT TRIGER
Q406 2SA1015(Y) SOLENOID DRIVE
Q407 2SC1383(S) SOL
Q408 2SC1383(S) CONST VOLTAGE
Q413 2SA683(RS) SOLENOID DRIVE
IC401 TC9138P
D409 SL1160L
MS PROGRAM INTERVAL DETECTION TIME ADJ.
Q139 2SC1846(R) CONST. VOLTAGE
Q140 2SC1815(Y) SWITCHING
B REC/PB C.B
Q137,138 2SC1815(Y) MUTING
IC103 LM1111 DOLBY-NR
IC101 LA3161 PHONO AMP
LINE-16.5dB PHONO-48dB
(L) J1 PHONO (R) J2
Q103 2SC2240(GR) PRE AMP
Q105 2SC1815(Y) MUTING
Q107 2SC1815(GR) MUTING
Q133 2SC2001(K) MUTING
IC105 AN-7146 POWER AMP
IC106 TC4066BP DIN SWITCHING
LPF101
J5 DIN
D MONITOR C.B
Q109 Q111 2SC1815(Y) MONITOR AMP
Q113 2SC1815(Y) REC SWITCHING
Q115 2SC1815(Y) PB SWITCHING
REC VOLUME
DOLBY BIAS TRAP ADJ.
VU METER ADJ.
Q125,127 2SC1815(Y)x2 METER AMP
Q129~132 2SC1815(Y)x4
ALC BALANCE ADJ.
IC102 LA3161 PRE AMP
Q101 2SC1815(Y) SWITCHING
PB LEVEL ADJ.
BIAS TRAP ADJ.
Q117 2SC1815(Y) REC AMP
REC CURRENT ADJ.
E REC/AMP C.B
Q119 2SC1815(Y) MUTING
Q121 2SC1815(Y) MUTING
Q123 2SC1815(Y) SWITCHING
BIAS CURRENT ADJ.
BIAS FREQ ADJ.
CP101 (OSC UNIT)
IC351 TA7137P DSL
Q351 2SC1815(Y) PRE AMP
Q353.355 2SC1815(Y)x2 BUFFER AMP
R.P.H Lch
MIC-L J3
ECM Lch
EH
R.P.H Rch
MIC-R J4
ECM Rch
S-17 (PAUSE)
I SWITCH C.B
F RELAY C.B
Q1 2SA1015(Y) SWITCHING
Q409~412 2SC1815(Y)x4
PEAK INDICATOR ADJ.
G LED-1 C.B
H LED-2 C.B
OPERATE /FM STEREO
J POWER C.B
BATT. SUMIX9 DC13.5V
VOLTAGE SELECTOR
220~240V 110~120V
J9 DC13.5
J10 AC~
S14 (MOTOR)
S15 (POWER)
J6 PHONES
J7 EXT SP-L
J8 EXT SP-R
SP1 SP2 SP3 SP4

NOTES
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S1-1~4
S2-1~8
S3-1~14
S4-1~6
S5-1~4
S6-1~4
S7-1~2
S8
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S10
S11
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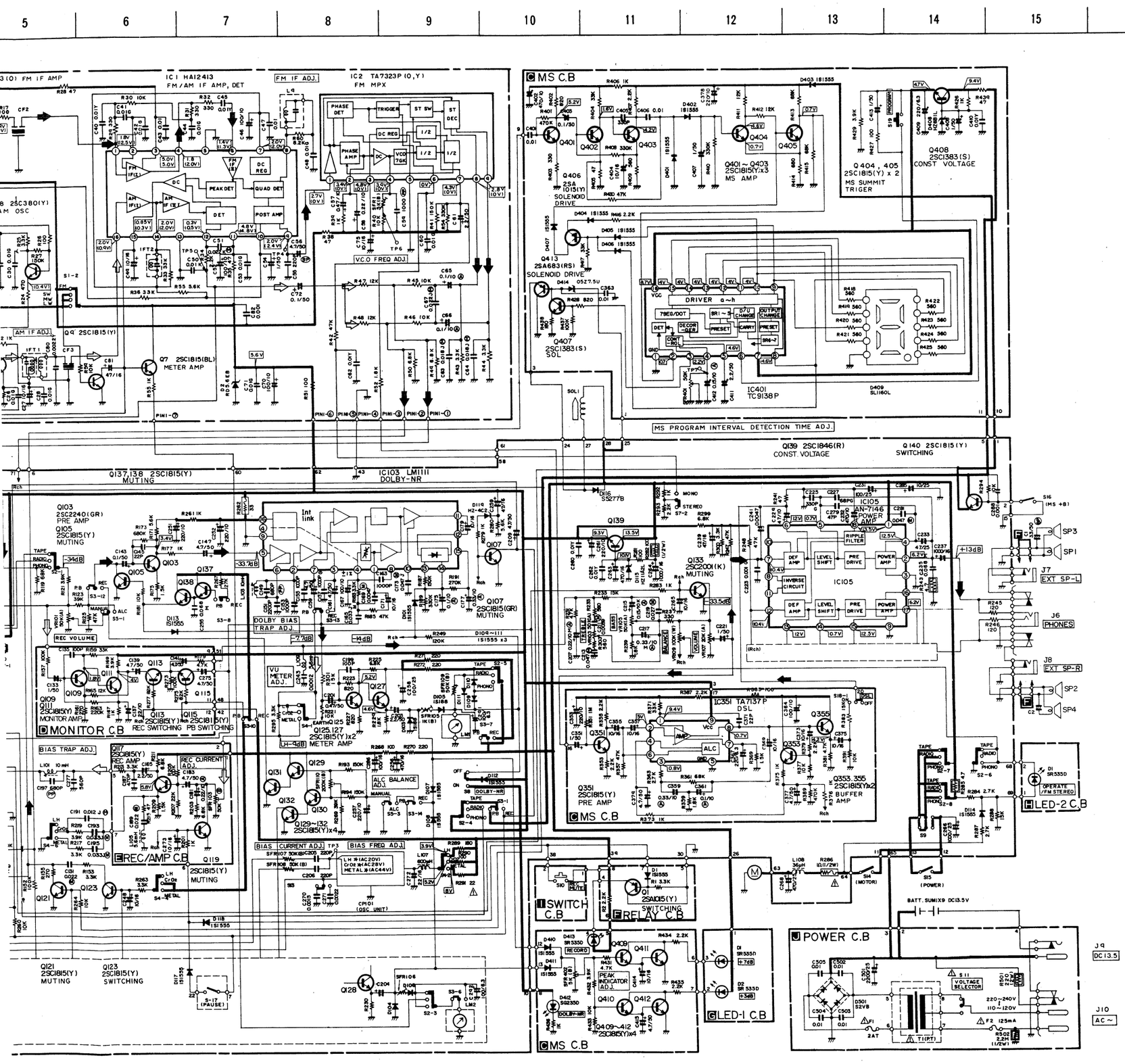
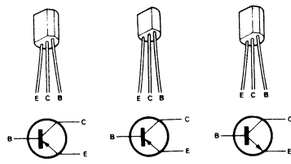
S20

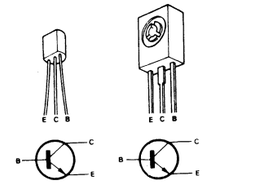


NOTES:

1) — B (+) power supply
2) ➡ Signal path
   ⇨ Rec path, AM signal path.
3) The voltage is the reference value measured with a tester (20 k-ohms/V DC) when there are no signals.
   But ( ) is with AM reception or recording.
   An asterisk (*) indicates that the value was measured with a vacuum-tube voltmeter during recording.
4) Resistors with no designation have a rated power of ¼W and a tolerance of ±5%.
5) Capacitors with no designation have a dielectric strength of less than 50WV.
6) The only capacitor tolerances indicated are ±5% (J) and ±10% (K).
7) Ceramic capacitor symbols:
   - For temperature compensation (SL)
   - High dielectric constant system (YY)
   - High dielectric constant system (YW, YP, YZ)
8) Explanation of symbols
   - (M) Mylar capacitor
   - (A) Aluminum solid capacitor
   - (PP) Polypropylene film capacitor
   - (BP) Bi-polarized capacitor
   - (T) Tantalum capacitor
   - Fuse resistor
   - Nonflammable resistor
   - ⚠ Safety component symbol
     This symbol is given to important parts which serve to maintain the safety of the product, and which are made to conform to special safety specifications. Therefore, when replacing a component with this symbol, make absolutely sure that you use a designated part.

- This schematic diagram is subject to change without notice in the interests of improved performance.





S1-1~4	BAND SELECTOR FM
S2-1~8	FUNCTION (TAPE)
S3-1~14	REC/PB (PB)
S4-1~6	TAPE SELECTOR (LH)
S5-1~4	ALC (MANUAL)
S6-1~4	PHONO/AUX (PHONO)
S7-1~2	MODE (STEREO)
S8	DOLBY-NR (OFF)
S9	SLEEP (OFF)
S10	REC MUTE (OFF)
S11	VOLTAGE SELECTOR
S13	OSC (OFF)
S14	MOTOR (OFF)
S15	POWER (OFF)
S16	MS +B SWITCHING
S17	PAUSE (OFF)
S18	DSL (OFF)
S19	PROGRAM (OFF)
S20	DIN